

The approach to the environmental issues in postgraduate nursing in Brazil

A abordagem das questões ambientais na pós-graduação em enfermagem no Brasil

El enfoque de los problemas ambientales en la enfermería de posgrado en Brasil

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ABSTRACT

Objectives: to analyze the insertion of environmental issues in the postgraduate *stricto sensu* in nursing in Brazil. **Methods:** quali-quantitative research, of exploratory approach, with documental research in the Sucupira Platform and in sites of the 112 courses *stricto sensu* in Nursing in Brazil, in 2018. We analyzed the curricular matrixes; course menus; teaching profile; dissertations and thesis (2004-2016); and bibliographic productions of the four-year evaluation 2013-2016. The analysis of quantitative data was performed by statistical methods; and qualitative data, by the Content Analysis Technique, outlined by Bardin. **Results:** the results demonstrate incipency in the treatment of environmental issues. Regarding the theme, we highlight those that refer to socio-historical-cultural aspects in relation to the more direct environmental approach and facilitator of environmental conservation and consequent promotion of health. **Final Considerations:** The analysis allows identifying the fragility of the environmental approach in the analyzed programs, being necessary to improve the cross-sectionality of environmental issues.

Descriptors: Education, Nursing, Graduate; Education, Nursing; Curriculum; Environmental Health; Brazil.

RESUMO

Objetivos: analisar a inserção da temática ambiental na pós-graduação *stricto sensu* em enfermagem no Brasil. **Métodos:** pesquisa quali-quantitativa, de abordagem exploratória, com pesquisa documental na Plataforma Sucupira e em sites dos 112 cursos *stricto sensu* em Enfermagem no Brasil, em 2018. Foram analisadas as matrizes curriculares; ementas dos cursos; perfil docente; dissertações e teses (2004-2016); e produções bibliográficas da avaliação quadrienal 2013-2016. A análise dos dados quantitativos foi realizada por métodos estatísticos; e os dados qualitativos, pela Técnica de Análise de Conteúdo, delineada por Bardin. **Resultados:** os resultados demonstram a incipiência no tratamento das questões ambientais. Acerca da temática, destacam-se as que se referem aos aspectos sócio-histórico-culturais em relação às temáticas de abordagem ambiental mais direta e facilitadora da conservação ambiental e consequente promoção da saúde. **Considerações Finais:** a análise permite identificar a fragilidade da abordagem ambiental nos programas analisados, sendo necessário aprimorar a transversalidade das questões ambientais.

Descritores: Educação Superior; Educação em Enfermagem; Currículo; Educação em Saúde Ambiental; Brasil.

RESUMEN

Objetivos: analizar inserción de temática ambiental en posgrado *stricto sensu* en enfermería en Brasil. **Métodos:** investigación cuali-cuantitativa, abordaje exploratorio, investigación documental en Plataforma Sucupira y en sitios de 112 cursos *stricto sensu* en Enfermería en Brasil, en 2018. Analizadas matrices curriculares; sumarios de los cursos; perfil docente; tesis (2004-2016); y producciones bibliográficas de la evaluación cuatrienal 2013-2016. El análisis de los datos cuantitativos realizados por métodos estadísticos; y los datos cualitativos, por Técnica de Análisis de Contenido, delineada por Bardin. **Resultados:** resultados muestran el inicio del tratamiento de cuestiones ambientales. Acerca de la temática, se destacan las que se refieren a los aspectos socio-histórico-culturales en relación a las temáticas de abordaje ambiental más directa y facilitadora de la conservación ambiental y consecuente promoción a la salud. **Consideraciones Finales:** el análisis permite identificar la fragilidad del abordaje ambiental en los programas analizados, siendo necesario perfeccionar la transversalidad de cuestiones ambientales.

Descriptorios: Educación Superior; Educación en Enfermería; Currículo; Educación en Salud Ambiental; Brasil.

INTRODUCTION

In the area of health, in Brazil, there are 3.5 million workers, of which about 50% perform their functions in nursing. This area is present in all municipalities, strongly inserted in the Unified Health System, acting in the public, private, philanthropic and teaching sectors. Of the total of 1.8 million professionals who are part of the nursing team, 414 thousand are nurses⁽¹⁾.

The nurse, as a professional member of the health team, needs to have access to training that takes into account environmental issues in the development of actions to protect the environment, in order to improve the quality of life of the population and decrease the incidence of diseases arising from environmental disorders.

The concern with the environmental questions is not something emergent in the profession, having its origin in the very genesis of nursing. Florence Nightingale, precursor of nursing, in her book "Notes on Nursing", presents several observations about the adequacy of the environment in the prevention and treatment of diseases, what became known as "Florence's environmentalist theory". This theory has concepts that serve as a parameter today, and its relevance is considered a milestone in the history of nursing⁽²⁾.

The International Nursing Code defines that the nurse must be responsible for preserving the environment, protecting it against impoverishment, degradation and destruction⁽³⁾. This is because it is considered one of the main determinants of health, and the maintenance of its balance increases not only the expectation, but also the quality of life. Thus, nurses should be aware of environmental problems, in order to address this issue with individuals and communities⁽⁴⁾.

In this sense, there is an urgent need for the implementation or revision of this type of discussion in nursing training, so that a better environmental approach is achieved. It is based on the importance of the resolution and prevention of diseases caused by environmental risks to which the population is exposed; and, mainly, it seeks the production of a healthier environment, which provides better living conditions and in which there is participation of efforts for the preservation of planetary health.

In general, Brazil has a vast legal framework with regard to the recommendations of the transversal insertion of environmental issues in the scope of formal education at the higher level⁽⁵⁻⁷⁾. Although theoretically based, the recommendations need studies and analysis in order to broaden the debate about their effectiveness or difficulties in implementation.

The postgraduate program has been contributing significantly to the academic environment in Brazil, either by its performance in the technical formation of professionals, capable of contributing to sustainable development, or by its social function in the organization of society⁽⁸⁾.

Some studies have analyzed the insertion of environmental issues in postgraduate programs in Brazil in different areas: Chemistry⁽⁹⁾; Tourism⁽¹⁰⁾; and Administration⁽¹¹⁻¹²⁾. So far, no such analysis has been carried out in the scope of Nursing or any health profession.

When the literature on Nursing training and environmental articulation was consulted, it was observed the still inexpressive quantity of publications, considering the high number of professionals in the area and the importance of the theme for health promotion purposes. So far, it has been observed that some

studies discuss, even discreetly, the need for the theme to be inserted in the nurse's formation⁽¹³⁾ and for teachers to develop an environmental perception⁽¹⁴⁻¹⁵⁾. However, there is a gap in the discussion on the environmental approach in the post-graduate Nursing. In this context, the relevance of this study is based on its unpublished analysis.

OBJECTIVES

To analyze the insertion of the environmental theme in the *stricto sensu* post-graduation in Nursing in Brazil.

METHODS

Type of study

This study has a quali-quantitative, descriptive and exploratory approach and is characterized as a nationwide survey.

Study scenario

The scenario of this study includes 112 postgraduate courses *stricto sensu* in Nursing registered in the Sucupira Platform of the Coordination for the Improvement of Higher Level Personnel (CAPES), in the year 2018.

Methodological procedures

This work analyzes all the courses *stricto sensu* in Nursing in the year 2018. The analysis is based on secondary data available on the Sucupira Platform of CAPES and the sites of the master and doctoral programs researched in Brazil. The SRQR instrument of Equator was used for qualitative research.

Data source and organization

The data collection took place from January to July 2018. The empirical data was collected on the CAPES website in the following documents: Evaluation Indicators Booklet of Post-Graduate Nursing Programs (PGPs), for the year 2017; and Area Evaluation Sheets for the last quadrennium (2013-2016).

In the Sucupira Platform, data were also collected regarding the formation of teachers registered in the area, dissertations and thesis produced in the period from 2004 to 2016, as well as general bibliographic productions from the last four-year assessment with the environmental theme.

From the website of each program researched, the following information was extracted: name of the educational institution, acronym, state, starting year of the course, concept attributed by CAPES, level, name of the course, specific subjects and content on environmental issues.

Data analysis

The quantitative approach comprised the descriptive statistics of the information collected, as well as the quantification and treatment of the categories of analysis⁽¹⁶⁾ obtained based on the disciplines and contents. The qualitative approach contemplated

the Content Analysis outlined by Bardin⁽¹⁶⁾, based on the information collected from the course menus and documents of the Nursing area of CAPES.

In order to carry out the Content Analysis, the concept of environment adopted was established in accordance with the National Environmental Policy, which defines it as a set of conditions, laws, influences and interactions of a physical, chemical and biological order, capable of allowing, sheltering and governing life in all its forms⁽⁵⁾; In addition to the concept established by ISO 14.001/04, which conceives it as a neighborhood in which an organization operates, including air, water, soil, natural resources, flora, fauna, human beings and their inter-relationships⁽¹⁷⁾.

The content analysis proposed by Bardin is divided into three phases. The first is called pre-analysis and corresponds to the phase of organization of the collected material. It is subdivided into the following stages:

- Floating Reading: at this time, the information collected from the course menus and curricula was read and deepened, as well as other important information obtained from the program websites.
- Choice of documents: the subjects' menus were defined as the main objects of analysis for formulating the categories of analysis.
- Formulation of hypotheses and objectives: it was established here that data would be collected from the disciplines and contents, the contents being the most relevant for the formulation of the categories of analysis. Thus, the disciplines would be separated into thematic blocks only, and the contents would advance to the next stage of this analysis.
- Indexes referencing and indicators elaboration: a step carried out by means of text cutting in the analyzed documents. In this stage, the information related to the contents with direct environmental issues and those with indirect environmental issues were separated.

The second phase consists of the exploration of the material, with the definition of categories and the identification of the registration units. This phase is characterized as the analytical description phase, corresponding to the corpus submitted to in-depth study, being guided by hypotheses and theoretical references. Therefore, in this phase, the codification, classification and categorization of the corpus of research took place; and the contents were classified and categorized as to their thematic approach.

The third and final phase refers to the treatment of results, inference and interpretation. Here, condensation and due prominence of information for analysis occurs, being considered the moment of intuition, reflexive and critical analysis⁽¹⁶⁾.

For the purpose of organizing and deepening the discussion, environmental issues are treated here as:

- Direct environmental issues: those related to natural resources and their conservation, strategies for adaptation or mitigation to environmental disorders and strategies for environmental preservation. Explicit questions, the words or expressions with the term ambient were also considered.

- Indirect or approximate environmental issues: those related to social, cultural or educational issues, as well as regional specificities.

RESULTS

Environmental issues in the Post-Graduate Nursing Programs in Brazil

The survey of the training of teachers registered in the PGPs of the Nursing area identified 1,518 registered teachers, 64.9% with training in the large area of Nursing. Regarding the training of these teachers in environmental areas, only two (0.13%) were identified, with doctorates. This number is lower than the number of teachers without an informed area (0.26%). Even grouping the areas of Biological Sciences (4.35%), Agrarian (0.79%) and Environmental (0.13%), the total is 5.27% of teachers registered, or approximately 78 teachers in Brazil, which shows a still low quantity.

When analyzing how the disciplines that address environmental issues are arranged in the Master's and Doctorate courses in Nursing in Brazil, a low quantity of them was found in the curricular matrixes of the analyzed courses.

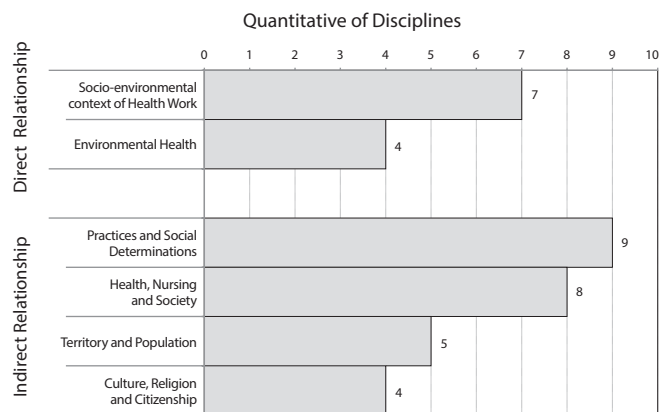


Figure 1 – Quantitative of disciplines with an environmental approach in Master's and Doctorate courses in Nursing in Brazil by thematic block

It is observed that, of the 37 disciplines found, 11 have a direct relationship with the environmental theme, and 26 have an indirect relationship. The theme in greater quantity in the general total involves the social aspects (Practices and Social Determinations). When a quantitative analysis of the courses that offer subjects related to environmental issues was made, the following data was found:

Table 1 – Percentage of Master's and Doctorate courses in Nursing with environmental disciplines by Brazilian region in 2018

Region	Total number of courses	Courses with environmental subjects (%)	Direct relation (%)	Indirect relation (%)
CO	9	22.2	0.0	22.2
N	2	50.0	0.0	50.0
NE	29	31.0	3.4	27.6
S	24	20.9	16.7	4.2
SE	48	37.5	10.4	27.1
General Total	112	31.2	8.9	22.3

Note: CO – Centro-Oeste; N – Norte; NE – Nordeste; S – Sul; SE – Sudeste.

It can be affirmed that, of the 112 courses analyzed, 35 have specific subjects on environmental themes, which corresponds to 31.2% of the total. It is noteworthy that, in the Southeast and Northeast Regions, more than 30% of the courses have environmental subjects; and although the North Region appears with 50% of the courses with environmental subjects, this number has no relevance if compared to the other regions, since it has only two registered courses.

In terms of a more direct relationship with the theme, the Southern Region stands out in the country, with 16.7% of the courses working with the theme through disciplines. The Center-West and North Regions do not present any subject with a direct relationship in their 11 courses. In the Northeast Region, 3.4% of the courses have subjects with environmental issues of direct approach; and in the Southeast Region, 10.4%.

In the general evaluation, courses that work with indirect approach subjects appear more frequently. All regions, with the exception of the Southern Region, have percentages above 20% of courses with these subjects. Thus, it can be stated that the approach to environmental issues through disciplines is still discrete and occurs mostly by addressing indirect environmental issues.

The cross-sectionality of environmental issues: divergences and convergences

Based on the concept of transversality as a way of integrating topics to conventional areas and current issues⁽¹⁸⁾ and researching the environmental contents worked in the PGPs in Nursing, the following categories of analysis were identified:

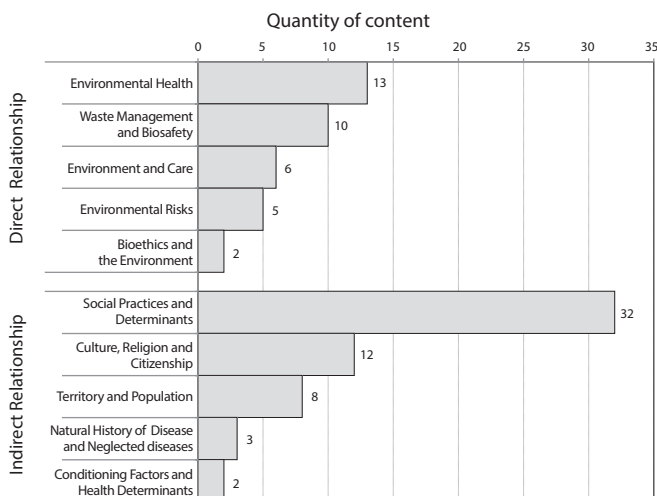


Figure 2 – Quantitative of environmental content by categories of analysis in Master's and Doctorate courses in Nursing in Brazil

We found 93 contents with the theme; this number corresponds to an average of approximately one content per analyzed course, considering that, of the 112 analyzed courses, only 84 make the menu available at the site. When analyzing the menus, some interesting findings were identified:

- In a PhD course in the Southern Region of the country, it was identified that a discipline discusses financial issues related to new technologies, but environmental issues are not covered, at least in the menu;

- Several Master's and Doctorate courses that work on management in general terms or even quality management of health services do not address environmental management nor do they make references to issues related to waste management;
- In courses with subjects about current or emerging themes of nursing, the environmental issues are not highlighted either, nor its relation with the profession;
- In a PhD course in the Southeast Region, a fact that calls attention refers to the emphasis given to medicalization in the health-disease process to the detriment of health determinants and conditioning.
- Still in the Southeast Region, a Master's course addresses emerging and re-emerging diseases without contemplating environmental issues in its menu.

Many are the gaps identified in the menus. Several disciplines that could be highly environmentalized are extremely fragmented and have an archaic view of global development, focusing only on economic and scientific aspects.

However, some examples are positive regarding the insertion of environmental issues in this type of training. We can mention the fact that a doctorate course in the Southeast Region works with transversal themes in the discipline "Health Promotion in Basic Care". Another example includes a master's course in the South Region that works with "Florence Nightingale's environmental theory" in its disciplines.

Regarding the transversal treatment of environmental issues, it was observed that 38 courses (45.2%) approach the subject in this way, but discreetly. In general terms, the Southeast Region presents the environmental theme in a transversal way in at least 50% of its courses, considering that 8 of them do not make the menus available electronically. In this region, the contents of direct relation also appear with emphasis. Regarding the direct relation contents, there was no occurrence of them in the North and Northeast Regions.

Of the 84 courses analyzed, 40% have indirect approach contents. In the Southeast Region, 50% of the courses approach the subject; and in the North Region, all of them approach it. According to the above, it is possible to state that the contents are mostly presented indirectly and in the Northeast and Southeast Regions. The latter, which has the largest number of registered courses, is shown here as the largest contributor in the process of cross-sectionality of the theme.

Scientific production in the context of environmental issues

In the analysis of the disciplines and contents of the component courses of PGPs in Nursing in Brazil that relate to environmental issues, one can identify the fragility of the approach both in the work through disciplines and transversal. Although present, both contents and disciplines appear in relatively low numbers and can significantly impact the environmental training of nurses in the country. The fragility in the teaching field raises the need for an in-depth analysis of the impacts on research on environmental issues in the courses researched and the consequences on the dissemination of knowledge to society.

In the scientific field, when analyzing the dissertations (n = 8,901) and theses (n = 2,544) from 2004 to 2016, and the publications (n = 65,529) of the last four-year evaluation of CAPES (2013-2016), the following data were identified:

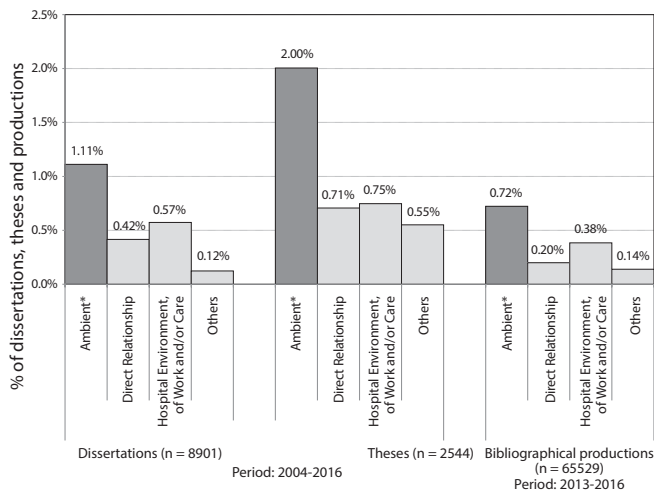


Figure 3 – Dissertations, theses and publications with an environmental theme in the Master's and Doctorate courses in Nursing in Brazil

In the scope of the dissertations, those with the term ambient in their title correspond to 1.1% of the total produced in the area. In relation to the theses, 2%; and general productions, 0.72%. When analyzing the corpus of the productions found, and classifying the themes, the percentage of those that refer to the environmental issues themselves fall in a significant way. This low bibliographic production may suggest the lack of interest in research on the subject as a reflection of an environmental education that is still fragmentary.

After thorough analysis of the dissertations and theses, 37 dissertations and 18 theses published in the period 2004-2016 were found with the term ambient and in direct relation with environmental issues in the area of Nursing.

It was observed the absence of dissertations and thesis in 2006 and 2007 and the low number of annual productions. In 2015, which was the year with the highest number of productions, 11 works were produced in the whole country.

DISCUSSION

This study aimed to analyze the approach to environmental issues in PGPs in Nursing in Brazil, in addition to highlighting aspects related to training and scientific production in the area studied.

The field of construction of environmental issues has been constituted as a place of dispute of a utilitarian root, which understands the environment composed by the material resources and disregards the specific socio-cultural contents; and a cultural root, which embraces a multiple environment in its socio-cultural qualities understanding man as a historical social being⁽¹⁹⁾. The objective of this work was not to separate the utilitarian and cultural roots, but to enrich the discussion on the subject, working with the themes considered here as direct and indirect.

As for the training of accredited teachers, this is mostly concentrated in the large area of Nursing, and the training in Environmental Sciences is less even than the uninformed training, which corresponds to two teachers registered throughout the country.

Teacher training is one of the factors that can foster success in the interdisciplinary approach to environmental issues. It is complicated to approach problems together and under different

perspectives when there is hegemony in the training of the teaching staff. It is valid to consider that, far beyond a curricular reform, it is necessary to reform the thinking of all the actors involved in the teaching process⁽²⁰⁾. Only after this reform, can environmental issues permeate educational practices.

It was found that, among the 112 courses *stricto sensu*, 35 courses have disciplines on the subject, being ten courses with direct approach environmental disciplines; and 25 courses with indirect environmental disciplines. It is necessary to understand that, although contemporary disciplinary education brings a lot of knowledge, it is insufficient for a multidimensional understanding of the problems⁽²¹⁾, since it is based only on the specialization of knowledge in that disciplinary domain. This could be solved by the operationalization of cross-sectionality in the curricula⁽²²⁾.

The treatment given to Environmental Education in higher professional training is still reductionist and presents gaps in approaches and basic foundations, presenting itself in a very embryonic way in some Nursing courses⁽¹⁴⁾, as well as identified in the analyzed postgraduate courses. It is important to approach the environmental theme transversally in order to cross different disciplines, subsidizing an integrated and contextualized view of the relationship health and environment⁽²⁰⁾.

Regarding the transversal treatment of environmental issues, it was observed that, of the 84 courses analyzed, 38 approach the subject transversally, but still discreetly. It was verified that the environmental contents appeared 93 times in the menus, which would give an approximate average of one content per analyzed course.

The cross-sectionality and interdisciplinarity so recommended in official educational documents⁽⁵⁻⁷⁾, need to permeate all environmental education in professional training. Thus, universities need new methods and approaches for the teaching-learning process and communication between the actors of the process⁽²³⁾.

For the Nursing area, interdisciplinarity is an important exercise since, by connecting with other areas, through dialogic actions and reconstruction of new knowledge, it appropriates its practices and scientific knowledge⁽²⁴⁾.

Environmental knowledge is distinguished as it interacts with the object and thematic field of each science. Thus, it does not constitute a new field of knowledge or a new discipline of higher education, but a knowledge involving epistemological and methodological approaches that allow us to address its problems linked to different forms of knowledge⁽²⁵⁾.

The main categories of analysis that emerged from Content Analysis refer to social representations and practices. Such categories were highlighted in the disciplinary findings and contents. Although of relevant importance, such themes also appear in a reduced number, considering the totality of courses.

Studies point out that reality is still based on academic offers based on discipline, whether in the curriculum or in research. Even the realization of interdisciplinary research in universities is challenging, due to the historically rooted thinking of areas of knowledge⁽²⁶⁾.

In terms of academic production, 37 dissertations and 18 theses were found when analyzing the dissertations and theses prepared in the period from 2004 to 2016. Their temporal analysis shows the very low production in the period from 2004 to 2016, with an average of five annual productions, and in the years 2006 and

2007, there were no productions with the researched theme. This low bibliographic production may suggest the lack of interest in research on the subject as a reflection of a still fragmentary environmental teaching.

In general, the legacy left by Florence points to health as a direct result of the interaction of environmental factors, and it is noticed that, although the precursor of modern nursing has already conceived this correlation, such theme is not yet fully considered by nursing professionals. This fact can be explained by the hegemonic biomedical model that values disease and assistance, to the detriment of health promotion.

It is a challenge of post-graduate Nursing that teachers, students and graduates have a quality academic production, constituting a source of knowledge among researchers, expanding possibilities of interlocution and strengthening the nursing as a science⁽²⁷⁾. Although the growth of post-graduate Nursing in Brazil has translated into an increase in scientific production in the area, which reached the 7th place in the international ranking in 2016⁽²⁸⁾, it is necessary to understand that the quantitative development is not enough to obtain the sustainability of the scientific production⁽²⁹⁾.

The year 2017 brought news and achievements to the *stricto sensu* post-graduation of the Nursing area in Brazil⁽²⁸⁾. However, it is necessary to rethink the role of these institutions in relation to the environmental problem and their performance in the construction and implementation of educational policies. They should contemplate the environmental theme in a transversal way in the different formative processes, in order to value a formation that emphasizes the environmental issues and forms critical and active professionals.

It is notorious that society has developed in recent decades exclusively with a view to economic issues, and it is a consensus that the construction of a more evolved development process requires changes of greater tenacity in teaching and research.

From the above, it can be affirmed that, although still in reduced number, the focus given to socioeconomic and cultural issues is of paramount importance in the advancement and consolidation of the cross-sectionality of environmental issues, bearing in mind that these correspond to the essence of human beings and their social groups. However, direct environmental issues also need to be addressed, and it is essential to merge these environmental contents in the training of nurses.

Study limitations

The research presents as a limitation the scarcity of studies on the subject in question: the environmental approach in the *stricto sensu* post-graduation in Nursing. Such limitation occurs not only

in the scope of Nursing, but in the different areas of knowledge, which makes it difficult to analyze and compare the data.

Contributions to the Area

Considering the gaps regarding the environmental approach identified in the training of nurses in the country, some revisions can be adopted in order to improve the insertion of the environmental theme in the training in Nursing.

In view of the above, a greater involvement of the graduate school and its regulatory bodies may favor the environmental approach, not only at this level of education, but also at undergraduate level, in view of the "cascading effect" that this may cause with regard to the transmission of knowledge and behavior.

FINAL CONSIDERATIONS

The advance of technology and dissemination of information increases the need for periodic studies and updates. It is not enough just the certification to achieve success in the profession, it is necessary to incorporate new practices and information, among them, the environmental. In this line, environmental issues must be present in the discussion of the formation of all professionals, since the objective of a healthy planetary environment is common to all society.

As presented during the course of this study, despite the expansion of post-graduate Nursing and the scientific appreciation of the area, environmental issues still appear discreetly in the curricula of Master's and Doctorate courses in Brazil, this insertion and consolidation being a major challenge for health promotion.

It is necessary to rethink the role of these institutions in relation to the environmental problem and their performance in the construction and implementation of educational policies. They should contemplate the environmental theme transversally in the different formative processes, to favor a formation that, emphasizing environmental issues, forms critical, active and effective health promoting agents.

In view of the results, it is necessary that the post-graduation in Nursing advances in the approach of direct environmental issues, which can easily be worked on within the scope of health promotion, bearing in mind that the environment is considered one of the determinants and conditioning factors of the health situation of the individual.

An interdisciplinary and transversal approach to environmental issues is essential in the training of nurses. Without this fluid approach, there is no way to break with the healing patterns of health, which historically permeated the training of this professional, and move towards a training focused on prevention and promotion.

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